



**PATENT**  
**Customer No. 22,852**  
**Attorney Docket No. 5725.0631-01**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of:	)	
	)	
<b>Gérard LANG et al.</b>	)	
	)	Group Art Unit: 1751
Application No.: 10/826,333	)	
	)	Examiner: E. Elhilo
Filed: April 19, 2004	)	
	)	
For: KERATINOUS FIBRE OXIDATION DYEING	)	Confirmation No. 9486
COMPOSITION CONTAINING A LACCASE	)	
AND DYEING METHOD USING SAME	)	

Commissioner for Patents  
P.O. Box 1450  
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Sir:

**DECLARATION UNDER 37 C.F.R. § 1.132**

I, Maxime DE BONI, declare and state that:

1. I am a French citizen, residing at 3, rue de Lagny, 75020, Paris, France.
2. I have been awarded an Engineer's degree from the Paris-Grignon National Agronomique Institute.
3. I have been employed by L'ORÉAL since 2003 and I am presently an applied researcher. During my employment at L'ORÉAL, I have been engaged in research and development regarding hair dyeing.
4. Given my education and experience, particularly in the area of hair dyeing, I consider myself able to provide the following testimony based on the following

additional experiments for the U.S. Application No. 10/826,333 conducted by me or under my direct supervision.

### **COMPARATIVE TESTING**

5. Comparative testing was performed with inventive composition 1 and comparative composition 2.

#### **I. Compositions**

The formulations of compositions 1 and 2 are summarized in the following Table

I. Inventive composition 1 contains 2-amino-4-N-( $\beta$ -hydroxyethyl)aminoanisoole as the coupler; while comparative composition 2 has 2,4-diaminoanisoole as the coupler, which is not in accordance with the present invention.

**Table I**

<b>COMPOSITION</b>	<b>1 (inventive)</b>	<b>2 (comparative)</b>
Para-phenylenediamine	0.25 g	0.25 g
2-amino-4-N-( $\beta$ -hydroxyethyl)aminoanisoole	0.2 g	-
2,4-diaminoanisoole	-	0.2 g
Laccase	5 g	5 g
(Alkyl C8C10 50/50) polyglucoside	8 g of A.M.	8 g of A.M.
Ethanol (95°)	20 g	20 g
pH modifier	q.s. pH 6.5	q.s. pH 6.5
Demineralized water q.s.p.	100 g	100 g

A.M.: active material.

## II. Dyeing Process

The dye compositions 1 and 2 described above were applied respectively to locks of natural hair, permed hair, and bleached hair. After 40 minutes at 30 °C, the hair was then rinsed with water and dried.

## III. Color Determination

The color of the hair was evaluated by using the L\*a\*b\* system, with a MINOLTA CM2002 ® spectrophotometer.

According to this system, L\* indicates the lightness of the color. The lowest value L\* is the most intense color of the dyed hair. The chromaticity (luminosity) of the hair color is expressed by the parameters a\* and b\*, a\* indicating the axis of red/green shades and b\* the axis of yellow/blue shades.

The results are expressed in the following Table II. The variation in color between dyed and undyed hair is defined by the value  $\Delta E$ , which is calculated from the following formula:

$$\Delta E = \sqrt{(L_c^* - L_{nc}^*)^2 + (a_c^* - a_{nc}^*)^2 + (b_c^* - b_{nc}^*)^2}$$

In this equation,  $L_c^*$  indicates lightness and  $a_c^*$  and  $b_c^*$  are the chromaticity coordinates of the dyed hair.  $L_{nc}^*$  indicates lightness and  $a_{nc}^*$  and  $b_{nc}^*$  are the chromaticity of the undyed hair. The higher the  $\Delta E$ , the more intense the hair color.

Table II

Hair	Composition	Colored Locks			$\Delta E$
		L*	a*	b*	
Natural Hair	1 (inventive)	34.90	1.52	-5.62	36.35
	2 (comparative)	49.89	-0.70	7.86	16.574
Permed Hair	1 (inventive)	25.56	3.94	-10.33	42.602
	2 (comparative)	56.11	0.23	13.43	5.2726
Bleached Hair	1 (inventive)	25.19	1.65	2.50	34.749
	2 (comparative)	38.60	4.66	16.76	15.18

As can be seen from Table II, all tested hairs, *i.e.*, natural hair, permed hair, bleached hair, dyed with inventive composition 1 have a much more intense color than hair dyed with comparative composition 2.

6. I further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further, that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Date: 11/05/05

By:   
Maxime DE BONI